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EXAMINER
WASSUM, LUKE S

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.		Applicant(s)	
	10/081,525		WISSNER ET AL.	
	Examiner		Art Unit	
	Luke S. Wassum		2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 February 2002_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-42_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-42_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _21 February 2002_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _4 and 6_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

DETAILED ACTION

The Invention

1.   The claimed invention is a database management system including request handler modules, a master control module and a plurality of database servers. The master control module assigns database servers to databases and matches client database requests (relayed from request handler modules) to the database server which has been assigned the requested database, while the request handler modules receive requests from clients and after receiving database server information from the master control module, passes the request to the database server assigned to the desired database.

Information Disclosure Statement

2.   The Applicants' Information Disclosure Statements, filed 26 June 2002 and 20 June 2003 respectively, have been received and entered into the record. Since the Information Disclosure Statements comply with the provisions of MPEP § 609, the references cited therein have been considered by the examiner. See attached forms PTO-1449.

Specification

3.   The disclosure is objected to because of the following informalities:

There appears to be a typographical error in the second to last sentence of paragraph [0035]: "...by the value *recorded#*" should be "...by the value *recordid#* ".

Appropriate correction is required.

Claim Objections

4.   Claim 41 is objected to because of the following informalities:

There appears to be a typographical error in claim 41: "1assigned" should be "assigned".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6.   Claims 2- 4, 12-14, 23, 30, 37 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7.   Regarding claims 2 and 12, the limitation that the database request is a request to create a database conflicts with the limitation of the respective parent claims that the database corresponding to the request is loaded. Since the request is to create a database, the corresponding database cannot first be loaded, since it does not yet exist.

8.   Claims 3 and 13, inheriting the deficiencies of their respective parent claims, are likewise rejected.

9.   Regarding claim 42, the limitation that the alternative database server is assigned based upon a failure in handling the database request conflicts with the limitation of its parent claim 41, wherein

the alternative database server is assigned based upon a comparison of a first and second expected loads.

The examiner recommends incorporating the 'assigning the database request to an alternative database server...' language of claim 41 into claim 42, and making claim 42 depend upon independent claim 35.

10.   Regarding claims 4, 14, 23, 30 and 37, these claims contain the limitation that a determination is made that there is no database server assigned to handle the database request. However, each of these claims depends upon an independent claim whereby a database corresponding to the database request is identified. Since the corresponding database cannot be both identified and non-existent, the claims are rendered indefinite.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12.   Claims 1, 9-11, 16, 20-22, 24, 27-29, 31, 34-36, 38 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by **Rierden et al.** (U.S. Patent 5,978,577).

13.   Regarding claim 1, **Rierden et al.** teaches a computer implemented method for handling

database requests for client systems over a network as claimed, the method comprising:

> a) receiving from a client a database request (see col. 6, lines 7-15; see also col. 9, lines 13-
>
> > 25);
>
> b) determining an assigned database server for handling the database request from a group
>
> > of available database servers (see col. 6, lines 7-15; see also col. 9, lines 13-25);
>
> c) prompting the assigned database server to load a database corresponding to the database
>
> > request (see col. 7, line 61 through col. 8, line 19, the claimed prompting being
> >
> > inherent in the disclosed system, since a database request cannot be serviced without
> >
> > first loading the database containing the requested data);
>
> d) providing the database request to the assigned database server for handling the database
>
> > request (see col. 6, lines 29-32; see also col. 9, lines 18-22); and
>
> e) providing a result of handling the database request to the client (see col. 9, lines 18-25).

14.   Regarding claim 11, **Rierden et al.** teaches a system for handling database requests for client

systems over a network as claimed, the system comprising:

> a) a request handling module which receives from a client a database request (see col. 6, lines
>
> > 7-15; see also col. 9, lines 13-25);
>
> b) a plurality of database servers which receive and handle database requests (see database
>
> > servers A, B, C and M 160 in Figure 1; see also col. 4, line 65 through col. 5, line 8);
> >
> > and
>
> c) a master control module in communication with the request handling module and the
>
> > plurality of databases, which receives the database request, determines an assigned

database server from the plurality of database servers for handling the database

request, prompts the assigned database server to load a database corresponding to the

database request, whereby the database request is provided to the assigned database

server for handling and a result of handling the database request is provided to the

client (see col. 6, lines 7-15; see also col. 9, lines 13-25; see also col. 7, line 61 through

col. 8, line 19, the claimed prompting being inherent in the disclosed system, since a

database request cannot be serviced without first loading the database containing the

requested data).

15.   Regarding claim 21, **Rierden et al.** teaches a method for handling database requests for

client systems over a network as claimed, the method comprising:

  a) communicating with a plurality of database servers that receive and handle database

      requests (see col. 6, lines 7-15; see also col. 9, lines 13-25);

  b) assigning databases to the database servers, including an assignment of a previously

      existing database to an assigned database server selected from the plurality of database

      servers (see col. 12, line 28 through col. 15, line 38);

  c) receiving a set of information about a database request from a request handler (see col. 6,

      lines 7-15; see also col. 9, lines 13-25; see also col. 28, lines 47-51);

  d) determining from the set of information that the assigned database server corresponds to

      the database request (see col. 6, lines 7-15; see also col. 9, lines 13-25); and

  e) sending an identification of the assigned database server to the request handler (see col.

      28, lines 47-51).

16.   Regarding claim 28, **Rierden et al.** teaches an apparatus for handling database requests for

client systems over a network as claimed, the apparatus comprising:

  a) a database server managing module, for communicating with a plurality of database

    servers that receive and handle database requests, assigning databases to the database

    servers, including an assignment of a previously existing database to an assigned

    database server selected from the plurality of database servers, and determining that

    an assigned database server corresponds to a database by examining a set of

    information about the database request (see col. 6, lines 7-15; see also col. 9, lines 13-

    25; see also col. 12, line 28 through col. 15, line 38; see also col. 28, lines 47-51); and

  b) a request handler communications module for receiving the set of information about the

    database request from a request handler, and sending an identification of the assigned

    database server to the request handler (see col. 28, lines 47-51).

17.   Regarding claim 35, **Rierden et al.** teaches a computer program product for handling

database requests for client systems over a network as claimed, the computer program product

stored on a computer readable medium and adapted to perform operations comprising:

  a) communicating with a plurality of database servers that receive and handle database

    requests (see col. 6, lines 7-15; see also col. 9, lines 13-25);

  b) assigning databases to the database servers, including an assignment of a previously

    existing database to an assigned database server selected from the plurality of database

    servers (see col. 12, line 28 through col. 15, line 38);

  c) receiving a set of information about a database request from a request handler (see col. 6,

    lines 7-15; see also col. 9, lines 13-25; see also col. 28, lines 47-51);

d) determining from the set of information that the assigned database server corresponds to

the database request (see col. 6, lines 7-15; see also col. 9, lines 13-25); and

e) sending an identification of the assigned database server to the request handler (see col.

28, lines 47-51).

18.   Regarding claims 9, 20, 27, 34 and 41, **Rierden et al.** additionally teaches a method, system,

apparatus and computer program product further comprising assigning the database request to an

alternative database server selected from a group of available database servers based upon a

comparison of a first expected load on the assigned database and a second expected load on the

alternative database server (see col. 9, lines 1-6).

19.   Regarding claims 10, 16, 24, 31 and 38, **Rierden et al.** additionally teaches a method, system,

apparatus and computer program product further comprising assigning the database request to an

alternative database server selected from a group of available database servers and providing the

database request to the alternative database server for handling the database request (see col. 6, lines

29-32; see also col. 9, lines 18-22).

20.   Regarding claims 22, 29 and 36, **Rierden et al.** additionally teaches a method, apparatus and

computer program product wherein the set of information about the database request includes a

database identifier for the previously existing database, and the database identifier is used to

determine that the previously existing database corresponds to the assigned database server (see

disclosure that the X-Ref Servers contain information for determining where specific data resides in

the system, necessitating the use of a database identifier, col. 8, lines 30-39).

Claim Rejections - 35 USC § 103

21.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section
> 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the
> subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

22.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966),

that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a)

are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating obviousness or
            nonobviousness.

23.   This application currently names joint inventors. In considering patentability of the claims

under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was

commonly owned at the time any inventions covered therein were made absent any evidence to the

contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and

invention dates of each claim that was not commonly owned at the time a later invention was made

in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35

U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

24.   Claims 7, 8, 18, 19, 25, 26, 32, 33, 39 and 40 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Rierden et al.** (U.S. Patent 5,978,577) as applied to claims 1, 9-11, 16, 20-22, 24,

27-29, 31, 34-36, 38 and 41 above, and further in view of **D'Souza** (U.S. Patent 6,453,468).

25.   Regarding claims 7, 8, 18, 19, 25, 26, 32, 33, 39 and 40, **Rierden et al.** teaches a method,

system, apparatus and computer program product substantially as claimed.

Rierden et al. does not teach a method, system, apparatus and computer program product

wherein an alternative database is chosen on the basis of the geographic location of request making

clients.

D'Souza, however, teaches a method, system, apparatus and computer program product

wherein an alternative database is chosen on the basis of the geographic location of request making

clients (see col. 18, lines 26-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to

choose an alternative database based on the geographic location of request making clients, since in

general, it is desired that transaction requests originated from a given locality be services by servers

that are closest to the place of origin (see col. 18, lines 32-35).

26.   Claims 5, 6, 15, 17 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Rierden et al. (U.S. Patent 5,978,577) as applied to claims 1, 9-11, 16, 20-22, 24, 27-29, 31, 34-36,

38 and 41 above, and further in view of **Lin** (U.S. Patent 6,298,451).

27.   Regarding claims 5, 6, 15, 17 and 42, **Rierden et al.** teaches a method, system, apparatus and

computer program product substantially as claimed.

        Rierden et al. does not teach a method, system, apparatus and computer program product

wherein upon the expiration of a timeout/failure in handling a database request, an alternate

database server is utilized in satisfying a database request.

        Lin, however, teaches a method, system, apparatus and computer program product wherein

upon the expiration of a timeout/failure in handling a database request, an alternate database server

is utilized in satisfying a database request (see col. 6, lines 15-39).

        It would have been obvious to one of ordinary skill in the art at the time of the invention to

utilize a secondary database server in the case of the failure of a primary database server, since this

would allow a database request to be satisfied, even if the server assigned to carry out the request

fails.

Conclusion

28.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Moore (U.S. Patent 5,287,461) teaches a method providing remote access to server consoles in a network by gaining access to the access server, which then provides access to any one of the serial ports associated with the access server, thereby providing remote access to any one of the plurality of server console lines coupled to the multiple serial ports.

Pitkin et al. (U.S. Patent 5,341,477) teaches a broker mechanism that allocates a plurality of servers, each having an available resource capacity, to a plurality of clients for delivering one of several services to the clients.

Delory (U.S. Patent 5,452,450) teaches a database network management method that ensures consistency of modifications to data in a network of databases.

Sudama et al. (U.S. Patent 5,483,652) teaches a method facilitating the processing of a request from a client application for a service, or for access to a resource, in a distributed computing environment.

Rogers et al. (U.S. Patent 5,701,451) teaches a browser that makes requests to web servers on a network which receive and fulfill requests as an agent of a browser client.

Rogers et al. (U.S. Patent 5,793,964) teaches a browser that makes requests to web servers on a network which receive and fulfill requests as an agent of a browser client.

Bodamer et al. (U.S. Patent 6,041,344) teaches a method for assigning foreign processes in a heterogeneous database environment including a local database server having heterogeneous services to selectively send foreign operations to the appropriate foreign processes in a controllable manner.

Braddy (U.S. Patent 6,141,759) teaches a method for distributing, monitoring and managing information requests on a computer network including one or more client computer systems, a first server computer system, and one or more secondary server computer systems.

Bodamer et al. (U.S. Patent 6,226,649) teaches a method for accessing foreign processes in a heterogeneous database environment including a local database server having heterogeneous services to selectively send foreign operations to the appropriate foreign processes based on their respective capabilities.

Hong et al. (U.S. Patent 6,266,673) teaches a mechanism for processing requests to specify operations to database objects.

Braddy (U.S. Patent 6,304,967) teaches a method for distributing, monitoring and managing information requests on a computer network including one or more client computer systems, a first server computer system, and one or more secondary server computer systems.

McCanne et al. (U.S. Patent 6,415,323) teaches a proximity-oriented redirection system for service-to-client attachment in a virtual overlay distribution network, including a redirector and logic for determining a selected server for handling a service request, the selected server being one of a plurality of servers that can handle the service request.

D'Souza (U.S. Patent 6,446,218) teaches a method of maintaining a predefined acceptable fault tolerance level for a plurality of software modules.

Rogers et al. (U.S. Patent 6,604,135) teaches a control program agent at a Web server that receives a browser request by way of a server side API and fulfills the request as an agent of the browser client.

DeWitt et al. ("Parallel Database Systems: The Future of High Performance Database Systems") teaches why parallel database systems have been successful.

Sheldon et al. ("Discover: A Resource Discovery System Based on Content Routing") teaches that the expansion of query fragments is essential for using large, dynamically changing heterogeneous distributed information systems.

French et al. ("Efficient Searching in Distributed Digital Libraries") teaches an effective method for reducing the number of servers needed to respond to a query.

French et al. ("Evaluating Database Selection Techniques: A Testbed and Experiment") teaches a testbed for database selection techniques and an experiment conducted using this testbed.

Karaul et al. ("A Market-Based Architecture for Management of Geographically Dispersed, Replicated Web Servers") teaches a technique that pushes allocation mechanisms to dispatch requests onto the client.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke S. Wassum whose telephone number is 703-305-5706. The examiner can normally be reached on Monday-Friday 8:30-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

In addition, INFORMAL or DRAFT communications may be faxed directly to the examiner at 703-746-5658.

Customer Service for Tech Center 2100 can be reached during regular business hours at (703) 306-5631, or fax (703) 746-7240.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luke S. Wassum
Art Unit 2177

lsw
17 June 2004